

In the Claims

Claim 1 (currently amended): A method for printing and curing ultraviolet (UV) curable ink, comprising the steps of:

printing a particular UV curable ink with a printing head on surfaces of products, articles, or other objects at a printing station;

emitting UV light at a substantially constant intensity from arrays of UV light-emitting diode (LED) chips at a curing station:

moving the UV LED chips and the printed products, articles, or other objects relative to each other;

~~uniformly~~ applying, distributing or sweeping UV light emitted from the UV LED chips equally at the same constant intensity on the particular UV curable ink printed on the surfaces on of the printed products, articles, or other objects facing the UV LED chips at the UV curing station while the UV LED chips and printed products, articles, or other objects are moved relative to each other; and simultaneously

~~uniformly~~ curing the particular UV curable ink to produce an identical degree of polymerization on the each printed UV curable products, articles, or other objects that is being cured over all the surfaces facing the UV LED chips as the UV light is ~~uniformly~~ applied, distributed, or swept on the UV curable ink equally at the same constant intensity.

Claim 2 (previously presented): The method of claim 1 wherein the printing head is reciprocated transversely of the products, articles, or other objects together with the UV LED chips.

Claim 3 (currently amended): The method of claim 1 including:

staggering rows of UV LED chips adjacent the printing head at the curing station so that the UV LED chips in one row are offset from all the UV LED chips in an adjacent row;
and

conveying or indexing the printed products, articles or other objects past the staggered rows of UV LED chips.

Claim 4 (previously presented): The method of claim 1 including emitting different

wavelengths of UV light on the UV curable ink.

Claim 5 (previously presented): The method of claim 1 including reciprocating or oscillating the UV LED chips in proximity to the UV curable ink at the curing station.

Claim 6 (previously presented): The method of claim 1 including maintaining the intensity and output of the UV light emitted from the UV LED chips generally constant while maintaining the temperature of the UV LED chips generally constant.

Claims 7-9 (canceled)

Claim 10 (previously presented): The method of claim 1 including further emitting fluorescent light upon the UV curable ink at the curing station from at least one fluorescent lamp.

Claim 11 (previously presented): The method of claim 1 including heating freshly printed UV curable ink at the curing station with at least one heat lamp.

Claim 12 (previously presented): The method of claim 1 including further emitting infra-red light on the UV curable ink at the curing station with at least one infra-red heat lamp.

Claim 13 (currently amended): An ultraviolet (UV) curing apparatus for curing UV curable ink from an ink jet printer or other printer, comprising:

sets of UV light-emitting diode (LED) chips positioned adjacent a printing head of an ink jet printer or other printer for emitting UV light upon a particular UV curable ink dispensed from the printing head upon surfaces of products, articles, or other objects;

a mechanism for causing relative movement between the sets of UV LED chips and the printed products, articles or other objects; and

a controller operatively connected to said UV LED chips for controlling and maintaining the intensity of the UV light emitted from the UV LED chips at a substantially constant level to uniformly apply and distribute UV light equally at the same intensity on the

particular UV curable ink facing the UV LED chips to ~~and~~ uniformly cure the particular UV curable ink facing the UV LED chips so as to produce an identical degree of polymerization of each printed UV curable product, article, or other object that is being cured over all the surfaces facing the UV LED chips.

Claim 14 (previously presented): The UV curing apparatus of claim 13 wherein said mechanism comprises a reciprocating mechanism for reciprocating the printing head and said sets of UV LED chips together transversely of the products, articles or other objects.

Claim 15 (canceled)

Claim 16 (currently amended): The UV curing apparatus of claim 13 wherein ~~some of the~~ UV LED chips in one row emit UV light at a different wavelength than other UV LED chips in said ~~sets of UV LED chips~~ another row.

Claim 17 (canceled)

Claim 18 (currently amended): The UV curing apparatus of claim 13 including:
at least one sensor for sensing the temperature of the UV LED chips; and
said controller is operatively connected to said sensor to maintain the temperature of the UV LED chips generally constant.

Claims 19-21 (canceled)

Claim 22 (previously presented): The UV curing apparatus of claim 13 including at least one fluorescent lamp operatively connected to the controller and the UV LED chips for emitting fluorescent light on the UV curable ink.

Claim 23 (previously presented): The UV curing apparatus of claim 13 including at least one heat lamp operatively connected to the controller for heating freshly printed UV curable ink.

Claim 24 (previously presented): The UV curing apparatus of claim 13 including an infra-red lamp operatively connected to the controller for emitting infra-red light on the UV curable ink.